APPARATUS AND METHOD FOR AUTOMATIC POLARITY SWAP IN A COMMUNICATIONS SYSTEM

ABSTRACT OF THE DISCLOSURE

An automatic polarity swap is implemented in a communications system. Two or more transceivers having differential inputs and outputs are coupled together through an interface, such as a backplane to form a communications system. In such a configuration, it is possible to cross-connect the differential data lines or signals at the interface, which will cause invalid data words to received at the second transceiver. Accordingly, the present invention includes an error check and correction module that detects invalid data words after parallel-to-serial conversion. More specifically, an error check determines if the parallel differential signal represents a valid data word. This can be done, for example, by storing and comparing valid data words in a memory such as RAM. If the received data word is valid, then no corrective action is taken. However, if the received data word is invalid, then the parallel differential signal is inverted using a logic circuit, which will correct the error if it is due to cross-connection of the differential lines at the interface or anywhere else.

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